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ABSTRACT

This document written by the Council of Ontario Universities (COU) is a response to the Report of the Commission on Post-Secondary Education in Ontario. The general introduction presents two principles that are considered important in discussing the report: social responsiveness and quality. The best form of social responsiveness is to ensure the preservation of the highest quality of all forms of postsecondary education. The problem is that the quality of education may take second place to the administration of services, or that education in the university will take place in spite of, and not because of, the elaborate bureaucratization of postsecondary education. After studying the final version of the Commission's report, the COU isolated a few subjects of particular importance to discuss comprehensively in this document. These matters are as follows: the place occupied by high standards of quality in the Commission's priorities; the structure of the system; the financing; student aid; and the place of examinations in licensure for professional practice. (Author/PG)

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Council of Ontario Universities
Conseil des Universités de l'Ontario

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RESPONSE TO THE REPORT OF THE COMMISSION ON POST-SECONDARY EDUCATION IN ONTARIO

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RESPONSE TO THE REPORT OF THE

COMMISSION ON POST-SECONDARY EDUCATION IN ONTARIO

102 Bloor Street West
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RESPONSE TO THE REPORT OF THE COMMISSION ON POST-SECONDARY EDUCATION IN ONTARIO

INTRODUCTION

In preparing its response to the Report of the Commission on Post-Secondary Education in Ontario, the Council of Ontario Universities decided upon a selective rather than a comprehensive treatment. Opinions on most of the matters in the Report which concern the universities had already been developed in the submission, Towards 2000, and in the COU Responses to the Draft Report. After studying the final version of the Commission's report, we isolated a few subjects of particular importance: the place occupied by high standards of quality in the Commission's priorities; the structure of the system; the financing of the system, especially the proposal relating to research financing; student aid; and the place of examinations in licensure for professional practice. These matters are treated in the sections which follow.

GENERAL

The two principal goals which informed the commissioners' thinking are cited in the second chapter of their report: "social responsiveness and quality". Without going through the recommendations one by one, we would urge that the best form of social responsiveness is to ensure the preservation of the highest quality in all forms of post-secondary education. The point is made by Professor Careless (page 207 of the report):

> The need of society (and also, really of the individual) for true quality in education, must rule as paramount. This same basic rule, in my opinion, must apply throughout the interpretation of the report.

We support Professor Careless entirely and would urge that his caveat be taken into account in any consideration given to the Commission's general drift towards a kind of diversity which requires plurality everywhere. To require, as the commissioners seem to do, a supermarket variety of "educational services" almost everywhere, complemented by the two provisions that what isn't available on the shelves of any of the existing emporia can either be purchased by mail-order from the Open Academy or acquired

in some other fashion out of a three million dollar fund, would seem to indicate the wisdom of a more restrained approach to expansion. In general, the strengths and the distinctions among the existing institutions would appear a more rational investment than the apparent homogenization of post-secondary education that the commissioners seem to favour.

The duplication of effort in the establishment of provincial and federal counselling services in addition to the continuance of the services now available in secondary and post-secondary institutions is another instance of the commissioners' insistence upon universal diversity. Indeed, everywhere we encounter the establishment of new agencies in addition to the existing ones, all of which will writhe under the weight of armies of bureaucrats and arsenals of data banks. It seems to us that the quality of education is likely to take second place to the administration of services, and that the reality of education in the university - the contact between students and faculty in the medium of a subject - will take place in spite of, and not because of, the elaborate bureaucratization of post-secondary education.

In sum, we urge that whatever the recommendation under consideration by the government or by its agencies, the strong and telling light of Professor Careless' warning be cast upon it before any decision is contemplated.

STRUCTURE

In its Response to the Draft Report of the Commission, COU put forward a position on its own responsibilities and power to implement decisions which had been arrived at by lengthy debate over a series of meetings. The Response argued for a specified mandate for COU to reach and implement collective decisions and proposed "delegation to COU of the specified central powers necessary for rational and coordinated operation of the system."

This proposal was rejected by the Commission in its final Report. However, in rejecting the COU proposal the Commission misinterpreted the intention. The statement distilling its objections is that: "Essentially, the system would invest a voluntary interest-group organization, the COU, with delegated governmental (underlining added) executive powers." In fact, the COU proposal identified the governmental powers, and indeed the powers of the government-appointed intermediary as being almost exactly the same as those described for these bodies in the final report of the Commission. Aside from

two non-controversial additions (the Commission provides for public hearings and special grants for innovation), the only possible difference berween the Commission's recommendations for the responsibilities of the "Ontario Council on University Affairs" and the COU's earlier recommendations for strengthening CUA lies in ambiguity related to the description of planning and coordination. Since the Commission identifies planning and coordination as a Council responsibility, not a governmental one, there is no disagreement between COU and the Commission on governmental responsibilities and there is nothing in the COU proposals which would vest in COU "delegated governmental executive powers".

There may in fact be no difference between the Commission and COU even in the one area of ambiguity. The Commission proposes that "the Council should plan and coordinate in consultation with universities and related voluntary associations". COU recommended that COU should be responsible for the orderly development of plans for graduate studies in the Ontario university system, and that it should advise CUA "in all of the areas where the final determination remains the responsibility of government". The Commission calls for consultation, but consultation cannot be effective unless COU is engaged in planning. Moreover, the Ontario Council on University Affairs itself could scarcely plan intelligently without the cooperation and participation of the university community through COU.

In practical terms what is called for is a system in which COU conducts planning exercises in a systematic way, using the resources of the universities and outside consultants as needed. The planning could be initiated by COU or in response to requests from the Ontario Council on University Affairs. In either case the procedures should be acceptable to both bodies. The fact is that planning is not too difficult for COU as the record shows. The real problem is implementation.

The Ontario Council on University Affairs should be responsible for implementation as recommended in the Commission's Report. It should in general exercise this responsibility on the basis of planning advice from COU (although it is recognized the OCUA may wish to receive advice on occasion from other sources.) Implementation should be achieved by providing funding in such a way as to be consistent with planning - witholding or approving eligibility as the case may be. The advantages of this relationship would be, first, that the resources of the universities would be brought to bear on planning, and second,

that the universities' representatives on COU would not be placed in the position of conflict where they must themselves make the executive decisions affecting their institutions. For the system to work effectively, the Ontario Council on University Affairs in general should rely on COU to conduct the necessary planning and to make recommendations. The OCUA should of course approve the procedures. It should either accept the recommendations arising from the plans, or if it believes that the plans or recommendations have errors of omission or commission, it should refer them back with specific identification of the difficulties. In instances where the ultimate recommendations from COU remain unacceptable to the Ontario Council on University Affairs, the latter Council would have to exercise the right to make its own decision.

The proposed relationship is not intended to constrain the freedom of either COU or OCUA to undertake studies on their own initiative; the object of these proposals is to develop a general working relationship which can make the process of consultation meaningful and thorough. It should also be noted that where a university disagreed with a collective recommendation, it would be free to make its own recommendations to the OCUA, as a matter of course informing COU that it was doing so.

COU therefore strongly supports Recommendation 91 in the COPSEO Report on the understanding that the Ontario Council on University Affairs shall seek systematic planning advice from COU and will work closely with COU in the implementation of plans.

In supporting this Recommendation we wish to suggest that Clause 10 be not included in the terms of reference for the Ontario Council on University Affairs. This is not because we do not support the principle but because we believe it should be left to the Council itself to decide the process for allocating resources rather than to be constrained by a specific directive.

We wish to add two further recommendations concerning Chapter 8 of the COPSEO Report.

The first is that without prejudice to the establishment of a Council for the Open Educational Sector, the question of the formation of the Open Academy and its relation to universities and colleges should be studied further before it is included in the terms of reference of the Council for the Open Sector as defined in Recommendations 23 and 93 of the Commission on Post-Secondary

Education. The reason is that much of the work of an Open Academy might be closely related to the work of universities and colleges in extension work and in continuing education. In these circumstances careful consideration should be given to the nature and functions of the Academy and to which Council its jurisdiction should be assigned.

Our final recommendation is that Recommendation 96 of the Commission be endorsed with two qualifications:

a. that the Ontario Committee on Post-Secondary Education should be established by statute, and
b. that the presence of civil servants on the Committee is undesirable because it is inconsistent with the independence of the Committee as envisaged in the Report.

The presence of Deputy Ministers on such a Committee would be inconsistent with the independence envisaged for such a Committee. The Committee if it is to be of real value should be free to make critical comments concerning both the universities and government.

FINANCING

There are several features of Recommendations 111 to 116 with which members of the Committee on Operating Grants are in entire agreement. For example, the principles of equitable treatment of all post-secondary institutions, and of pro-rata subsidization of part-time students, are excellent ones. The setting forth of the right of church-affiliated colleges to be eligible for the same financial support as secular institutions, subject to appropriate conditions, is also to be welcomed.

More generally, any sound system of governmental financial support for post-secondary education should be such as to promote quality of education, minimize detailed bureaucratic interference by government in academic decision-making, and take timely account of trends in contemporary Canadian society affecting demand for university places.

On the latter score, Recommendation 111, advocating distribution of formula income on the basis of projected enrolment, may have been overtaken by events (as well as being somewhat questionable anyway in the light of earlier experience with university enrolment projections). It seems clear that we are now in a period of relatively flat or even declining undergraduate

enrolment in the Ontario university system and that the Ontario government's recent adoption of a "slipped-year" financing is a more appropriate response to this situation than so-called "payment-on-projection."

Indeed, we would like to see carried still further the basic slipped-year principle, with its attractive feature of making it possible for universities to plan ahead more rationally, yet not allowing them ultimately to escape the verdict of the student market. We believe that the quality of post-secondary education in Ontario and the rationality of its structure would be improved if financing arrangements were such that universities could plan ahead on a three-year basis - while still, of course, being very much aware of developments in enrolment, and of what effect these developments eventually have on financial resources available. We therefore note with interest COPSEO Recommendation 112 that "...grants and subsidy policies of the government and the proposed councils should be made and announced on a rolling three-year basis." We note also that experience with university grants in Britain, where the financing system permits a longer university planning period, might offer some useful guides to the practicalities of implementing this recommendation.

No formula-financing system - even one embodying much-to-be-desired improvements in the present Ontario structure of differential BIU weights - can cover all situations. Certain problems, such as those of the emerging universities and of bilingual institutions, will continue to require treatment on an extra-formula basis. Indeed, under present circumstances, it may be appropriate for the whole system to move somewhat away from the simpler type of student-based formula. Such a move may well prove to be necessary if only as a means of enabling some of the larger and older universities to stabilize their enrolments without major financial penalty - of ensuring that they are not placed under strong inducement to divert enrolment from newer institutions, in circumstances where enrolment in the system as a whole is stable or declining.

At the same time, however, it should be recognized that student numbers and other such broad statistical measures have their virtues as a basis for government payments to universities. They give better overall control and predictability to government expenditure-planning, while leaving the individual universities considerable freedom to divide up funds internally, according to their particular academic needs and priorities.

We do not comment farther on the system of formula financing, since at the time of writing a review of the formula is underway through the COU/CUA Joint Subcommittee on Finance/Operating Support.

In conclusion, we should like to draw attention to some possible financial implications of recommendations in another part altogether of the COPSEO report - in the part dealing with the Open Educational Sector and the Open Educational Academy. The principal relevant recommendations are 18, 20, 23, 24, and 26.

Provided it was planned and developed with care, and with sensitivity to the particular needs of its main potential student clienteles, the proposed Open Academy could be a most useful addition to post-secondary education in Ontario. Many existing institutions would be in a position to provide valuable ideas and resources - libraries, museums, universities, CAATs, and the Ontario Educational Communications Authority, for example. It might be wise to set up a planning group that included well-qualified representatives from all of these potential contributors. The group might want to draw particularly on the expertise of OECA and Ryerson - organizations with more practical experience than most of education over the air.

Further than this, we should like to warn of the danger of making the proposed Open Academy into yet another heavily Toronto-centred educational bureaucracy (although a fairly considerable initial role for Ryerson might nevertheless be appropriate), and at the same time point out the possible advantages of drawing somewhat disproportionately on the emerging universities for necessary teaching resources. The emerging universities have good teachers - many of them, moreover, young teachers, capable of reacting flexibly and creatively to the opportunities of the Open Academy. To make more-than-average use of them in the Academy might help both the Academy and the emerging universities - and the latter have, of course, already been judged worthy of extra-formula financial help by the Ontario government. One might even go so far as to envisage the setting up of Open Academy production teams and production sub-centres in the emerging universities, thus bringing about a desirable measure of geographical dispersion and decentralization away from Toronto.

Since some significant part of the Open Academy's programmes would presumably be directed towards francophone communities in Ontario, a

similar approach might be adopted of drawing on the teaching resources available in the province's three bilingual institutions.

FINANCING OF RESEARCH*

Financing of research in universities has been in recent years a topic of study, a target for criticism, and a source of anxiety. A number of reports both federal and provincial have dealt with this subject. From the growing literature we have chosen to select for partial review three with important similarities and, we think, significant similar errors in their policy proposals. They are the Bonneau-Corry Report on the Rationalization of University Research,(1) the Report of the Senate Special Committee on Science Policy, chaired by the Honourable Maurice Lamontagne,(2) and the Report of the Commission on Post-Secondary Education in Ontario.(3) In addition in presenting a number of alternative proposals, some of which are new, we have drawn on conclusions reached in the Macdonald Report on the Role of the Federal Government in Support of Research in Canadian Universities.(4)

The Bonneau-Corry Report

Bonneau and Corry's premise is that the primary function of universities is to teach and that everything else is secondary. This leads them to the view that research which sustains teaching is part of the primary mission and should be distinguished from research which is unrelated to teaching. They advance the proposition that such a distinction is possible and for their purposes introduce the terms "reflective inquiry" and "frontier research".

Reflective inquiry is described as "an almost entirely intellectual activity". As Bonneau and Corry put it "We are in the study or at the chalk board reflecting on the known knowledge, including the latest reports from the frontier". It is to work "not with the seeing eye or with the mind narrowly

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*This section was prepared by John B. Macdonald for presentation to the Canadian Society for the Study of Higher Education. It reflects views which COU wishes to see recorded in its response to the Commission's Report.

focused on minute analysis, but rather with the synthesizing mind, more concerned with breadth of view than with depth of specialization and research analysis". Reflective inquiry is said to be vital for all good teaching because the breadth of its sweep enlarges the vision. Erudite scholarship, on the other hand, when focused on minutiae often has a stupefying effect.

"Frontier research" is described as the "digging up of new facts". It is heavily empirical based on experiment and observation, and the identification of phenomena by the use of the senses. It is the kind of activity particularly common to the sciences and for which various agencies provide grants. The authors assume erroneously that this kind of research can be carried out effectively in the absence of reflective inquiry. Indeed they go so far as to claim that many faculty members are very good at frontier research and indifferent at reflective inquiry. Many scientists reject such a claim. One of the almost inevitable attributes of a scientist capable of very good frontier research is a capacity for reflective inquiry. Among other things, such thought determines the selection of research projects which usually bears heavily on the scientific significance of the results that are obtained. Technically skillful attention to inconsequential problems does not constitute good frontier research.

The authors also conclude that frontier research, unlike reflective inquiry does not contribute vitally to teaching at least in many disciplines. They offer no suggestions about which disciplines are exceptions or how they are to be distinguished.

The Bonneau-Corry conclusions concerning funding are based on the above assumptions. Since reflective inquiry is closely related to teaching it should be supported for the most part within the teaching budget. Since the main need of the reflective inquirer is time this is equivalent to saying that his salary should cover not only his teaching responsibilities but also a portion of his time which he can use for reflective inquiry. There are occasionally other minor costs - an assistant, travel to reach important library resources, office supplies. These should be available on application either from a designated university budget or from the Canada Council.

Frontier research on the other hand should be supported by external agencies, notably the three Councils, NRC, MRC, and Canada Council. Bonneau and Corry agree with other writers that the sponsors of frontier research should pay the indirect costs associated with the research. Unlike others,

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*Higher Education; *Academic Standards; *Educational Planning; *Educational Finance; *Government Role; College Administration; Administrative Organization; Policy Formation; Educational Objectives;Certification

they argue that the indirect costs should include a portion of the salary of investigators. Specifically they recommend that indirect costs be set at 45% as against earlier estimates in other reports placing indirect costs at 30 to 35%, exclusive of faculty salaries.[4,5] The reasons put forward for including a portion of faculty salaries in indirect costs were, first, that frontier research does not always support teaching. Second, because provincial governments may think certain research is irrelevant, they won't want to pay the salary costs associated with it.

The principal argument against this approach is that university control over the selection of faculty is essential for the maintenance of strong and independent institutions. If universities are to be successful in planning their programmes, the key decisions lie in their choices of faculty. Allowing faculty members to generate part of their salary by attracting research funds would prejudice and compromise the ability of universities to choose. This has been a serious problem in the United States and ought not to be imported, even in the modified form proposed by Bonneau and Corry.

A major part of the Bonneau-Corry report deals with the basis of making choices concerning the research which is to be undertaken in universities. They describe a complex system of committees in an interlocking hierarchy involving individual universities, consortia, provinces and the federal government. Each level is asked to deal with policy, i.e. institutional or governmental objectives in pursuing research. This so-called rationalization process is only indirectly related to the financing of research. It determines and limits the freedom of individuals to apply to funding agencies for the support of their projects. As such it is bound to have a stifling effect on creative imagination, depending as it does on the wisdom of committees to catalogue in advance all the areas in which it is sensible for a university or the nation to conduct research. It would be dampening and discouraging in another way also. Academics with ability and dedication to their field will be reluctant to face the series of hurdles which must be jumped before their project has a chance to be judged on its own merits. If they are good they will be tempted to seek and find a more salubrious research climate.

Returning to the distinctions between reflective inquiry and frontier research and the differences in funding them, one must ask what the authors hoped to accomplish by their proposals. They list their criticisms of the

present situation and by implication it is to the correction of these presumed faults that their recommendations are directed. The criticisms are that

1) No university has gone far in setting its objectives in research.
2) Graduate work has been started in a number of universities not yet qualified to offer it.
3) Nearly all universities have had too low standards of admission to graduate school, resulting in a high rate of dropouts.
4) There has been considerable duplication of expensive equipment.
5) Humanists, in particular, have suffered in advancement in rank and in salaries because in general they have not been engaged in frontier research.

These are sweeping indictments for which no evidence is offered. Their conclusions may or may not be correct. Was the dropout rate of graduate students higher in the booming Sixties than in earlier years? Has the cost of duplicating equipment been greater than the very real costs of not duplicating it? Have humanists really had slower advancement in rank and salary than scientists? In one large university where this question was examined (UBC), the evidence was that no such disadvantage existed.

Nevertheless, most persons would agree that too many universities entered graduate work too soon during the Sixties. If that is accepted, would the Bonneau-Corry proposals change that situation or prevent future recurrences? We cannot see how they would. Their one virtue is that they would help to have recognized the relationship between reflective inquiry and teaching. They would do so at the price of destroying the opportunity for spontaneity of agile and trained minds which is a fundamental requirement for a healthy research environment.

The Lamontagne Report

The Lamontagne Report in its view of universities and university research has much in common with the Bonneau-Corry Report. It argues that the primary role of universities is teaching and that research is secondary. It claims, without evidence, that universities have based their remuneration and promotions too exclusively on basic research performance. The Report distinguishes between basic research and "research on the existing stock of knowledge" which is related to teaching. Like Bonneau and Corry, they recommend that the latter be

funded out of general university revenues as a part of the educational budget. The Canadian government on the other hand, would be responsible for funding basic research in universities. The three Councils, NRC, MRC, and Canada Council, would be reorganized as granting Foundations to meet this responsibility. They would be expected to meet the full direct and indirect costs (exclusive of faculty salaries) associated with the research which they support. Applied or mission-oriented research would be supported mainly by departments and agencies of the federal government other than the granting Foundations.

The universities, however, would be expected to concentrate mainly on basic rather than applied research. They should, according to the Senate Committee, limit themselves mostly to projects requiring only one or two top scientists and a few assistants. Consequently, the Committee makes no mention of the idea of universities as such developing their own internal policies concerning research priorities. They nevertheless state that it is not necessary for all universities to be involved in basic research although they do not suggest that any institutions should be ineligible for grants.

Finally the Committee appears ambivalent about the basis for approval of research proposals. At one point it argues for quality rather than quantity and the support of applicants representing excellence as judged against international quality standards. At another point it argues for limiting support to projects which are relevant to the Canadian scene, that is, areas where applied research and development are also being done in Canada. This latter recommendation is difficult to understand, since they define such basic research or curiosity-oriented research as research in which "the problems cannot be defined by persons outside the discipline and the solutions are usually completely restricted to the framework of abstract concepts within the discipline." How then can it be determined that such research is in an area relevant to the Canadian scene and in which application is being sought?

The Report of the Commission on Post-Secondary Education in Ontario

The Commission on Post-Secondary Education in Ontario examined the current methods of supporting universities in Ontario and declared them to be unsatisfactory for several reasons. Since 1966 the government has determined its subventions to universities by a formula based on the number of students and the programmes in which they are registered. More expensive programmes carry a higher weighted value than relatively inexpensive programmes.

The arts and science undergraduate students carry a unit weight of 1 and PhD students a weight of 6 units. Income is determined by the value of the unit, adjusted annually.

The Commission claimed that the system has several shortcomings.

1) It does not encourage coordination. Graduate programmes proliferated according to the Commission without adequate attention to the need for quality, specialization, responsiveness to regional wants and economy.
2) The formula has a steering effect, encouraging universities to design programmes to maximize their incomes rather than to realize institutionally determined pedagogical goals.
3) The student count has been a proxy for all costs including both instructional costs and research costs. It has therefore tended to inhibit a clear assessment of society's research needs.
4) Indiscriminate support of research in all universities has hampered the development of excellence.
5) Funding of research on the basis of student numbers makes it difficult to ensure that "students who need subsidies" receive them. Presumably what is meant by the Commissioners is that educational programmes may be short-changed if funds are designated for research.

The modification proposed as a panacea for these weaknesses is to calculate the formula support on the basis of two independent variables - instructional costs and research costs. The instructional cost would continue to be based on student numbers, and would include costs of research vitally associated with teaching. Research not intimately related to teaching would be separately funded on a three to five-year basis following quality assessment. One of the keys to this approach, as in the case of the Bonneau-Corry recommendations is the ability to distinguish between research which is important to teaching and that which is not. The Commissioners acknowledge the difficulty. They suggest that the separately funded research should be that which is heavily capitalized and involves non-teaching functions. Yet they exclude from this category the scholarly work of humanists while counting libraries as examples of heavy capitalization. This example of contradiction merely serves to illustrate the operational impracticability of the separation.

The Commission, while claiming that its proposals would help to correct what they see as weaknesses in the present system, fail to explain just how this would be accomplished. They do, however, call for systematic planning of research within and between institutions, within the provincial government and at the federal level. Quality assessment would presumably take place at the provincial level and be superimposed on the quality assessment now imposed at the federal level by the granting agencies. One can only shudder at the bureaucratic potentialities for evaluating the quality of research in each university, taken as a whole and across all fields, as a basis for determining global research support. It seems not far-fetched to suggest that such assessment would be based on provincial research policies, whether or not they coincided with those of universities or the federal government.

This is not to suggest that quality assessment is not needed or that it is now performed in a satisfactory way. Stiffer assessment by federal agencies has been called for in the Macdonald Report,[4] the Lamontagne Report[2] and the Bonneau-Corry Report.[1] Surely, however, the question of quality should be decided for each research proposal and not by some summation and averaging of quality for a whole institution.

The features in common in all three of the above Reports are that

1) Teaching is primary; research is secondary.
2) Some research is related to teaching; some is not, and the two can be distinguished.
3) The university, through its general revenues obtained from the province, should pay for research related to teaching.
4) The federal government, through its granting Councils should pay for research not related directly to teaching.
5) The sponsors of research should pay both direct and indirect costs.

The main premises are wrong. It is not helpful to assume that teaching is primary and research is secondary. Both are essential to the idea of a university as that idea has evolved. An institution engaged in teaching but not research could be a valuable institution but it would not be a university. Conversely, a research institute not engaged in teaching would not be a university. Since both are essential no purpose is served in attempting to set their relative priorities. This is not to say that the relative emphasis on each is not a proper question of policy. Indeed it is, but it can be settled

very differently in different universities.

The second error is in assuming that an operational distinction can be made between research related to teaching and research not related to teaching. It is simply not true to suggest that reflective inquiry is vital to teaching and that frontier research is not. The reason is that it is not characteristic of frontier research that it excludes reflective inquiry. Quite the contrary, good frontier research is based on reflective inquiry. It is this activity which leads to the significant or critical experiment. Research is not the mere collection of disconnected facts. The heart of scientific endeavor is the arrangement of facts, the continuing effort to find the truth behind the appearances of things and the truth is not merely common sense conclusions. Often it is very uncommon sense. Bronowski has said, "the truth we are looking for in science is something at the center of things, it has to fit the facts, but it has to be much deeper, more coherent than the mere facts."(6)

As a single example nothing could be much more important to the teaching of biology than what has been learned about the genetic code. Could it possibly be argued that the frontier research on DNA by Watson and Crick which disclosed the code made less of a contribution to teaching because it involved precise x-ray diffraction observations and measurements?

The point is simply this. Research and teaching in the university are entwined and it is not possible in advance to predict which research will influence, indeed revolutionize, teaching.

The proposed separation of provincial funding of research and teaching would not solve the problems that it is intended to solve. It would not provide graduate planning. It would simply substitute one kind of steering effect in the formula for another kind. The separation would not produce an assessment of society's research needs, though it might tend to create a preoccupation with the political view of provincial research needs. The separation would not enhance the quality of research by imposing a new bureaucracy to evaluate what is already being evaluated. It would not prevent excess expenditures on research by universities. It might, in fact, aggravate such a tendency if the result could be expected to generate more provincial support.

An alternative proposal

Is there an alternative? We believe so; its origins were presented in a fourth report which pre-dated the three which have just been reviewed. It was Report No. 7 of the Science Council and Canada Council on the Role of the Federal Government in Support of Research in Canadian Universities.(4)

The alternative approach is based on the concept of a partnership involving the universities, the provincial governments and the federal government. Each of the partners has its own purposes in relation to university research and the financial arrangements need to serve the purposes of all the partners.*

Universities are both teaching and research institutions. Traditionally, they have favoured basic research, but in recent years have taken an increasing interest in applied research, especially in the professional schools. The universities conduct research for several reasons. They are society's principal instrument for continuing the culturally-important task of seeking new knowledge. They are a source of expertise for the solution of practical problems and for making contributions to the attainment of societal goals. Universities also conduct research because it enhances the quality of teaching. Teaching founded on research will engender a spirit of inquiry and enhance the ability to reach critical judgments. These are central to the teaching role of the university. Finally, universities engage in research because it is a necessary part of the task of training manpower to conduct research, whether for renewal of universities or to meet the needs of government, business and industry.

While all universities must be engaged in research, their individual roles may vary greatly. Some may limit their research principally or even entirely to what Bonneau and Corry have called reflective inquiry. As recently as 1965-6, fifteen universities in Canada received no income for sponsored, assisted or contracted research. Some universities on the other hand, may commit a great deal of their effort to research requiring financial support. In 1965-6, for example, five Canadian universities received over 30% of the total funds dispersed for university research. Most universities have research activities between these two extremes.

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*The financial arrangements dealt with here exclude capital funding such as buildings and libraries. Proposals concerning these items are included in the Macdonald Report.(4)

Universities ought also to be committed to the principle that worthwhile research ideas may originate in any discipline. They should be prepared to provide a home for such research regardless of the field, subject to careful assessment being made of the merits of the proposal and the ability of the applicant.

The federal government as the second partner has its own interests to be served. The federal government is not interested in research as a goal in itself. Its concern is with the contribution research can make to the attainment of societal goals. The goals may be better health, cleaner cities, increased agricultural production, etc. The question for government is how can research help achieve the goals.

Among the goals of the federal government is the maintenance of a strong network of universities. This is an objective of national governments throughout the world. In Canada, the federal government contributes directly to the strengthening of universities through its support of research within them. Its main decision must be how much money it will devote to this purpose. The Lamontagne Committee, noting that 22% of Canada's research effort is in the field of basic research proposed that that percentage be reduced to 18% by 1980. Since they recommended growth in total Research and Development from about 1.3% of GNP to 2.5% by 1980, there would remain room for continuing growth of basic research from $205 million in 1967 to $475 million in 1980, according to their proposals.

Once the government determines the amount of money it is prepared to devote to university research, and consistent with its commitment to a strong network of universities, it should adopt the following policies.

1) It should be prepared to entertain applications in any field while allocating its money for different fields with an eye to maintaining a reasonable balance of research activity within the universities.
2) It should reform its procedures for assessing merit to make the judgments more rigorous and it should award grants within a field strictly on merit.
3) It should pay the full direct and indirect costs of research which it supports (exclusive of faculty salaries).

The importance of paying indirect costs needs emphasis. If they are not paid by the sponsor, the university is forced to allocate its general revenues to this purpose, thus distorting its own internal priorities and very likely drawing on money which should be allocated to teaching. Not only is the university frustrated but so also will be the provincial government which puts up the funds for general university support. If, on the other hand, full direct and indirect costs are paid by the grantor, the fiscal effect is neutral.

Quite aside from its support of research intended to help maintain a strong network of universities, the federal government will be interested in research in a host of areas important to governmental objectives. Whatever these goals, the government can, for purposes now outside of the university, seek to procure from the university the research which it requires. This is generally done through a contract arrangement. The research can be solicited by government or proposed by the university on the basis of its view of the research needed to achieve some national goal. Whichever way it is originated, it calls for careful negotiation to ensure that the goals of both parties are served.*

Turning finally to the role of the provincial governments, it can be said that their objectives parallel those of the federal government, i.e., to have strong universities and to procure research important to the attainment of provincial goals. Here, however, the similarity ends. The provincial government has a broader and more direct concern for the universities than has the federal government. It supports the educational functions and provides for the faculty required for both teaching and research. Its concern with research relates to the policies of the university as a whole. Its support is given to the university to be expended as the university determines, whereas the federal government gives its funds in trust to the university for the support of specific research projects and identified grantees.

If the federal government should adopt the policy of paying full direct and indirect costs of the research which it supports, the provincial contribution

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*The conditions which bear on the appropriateness of university participation in such research are dealt with in the Macdonald Report, pp. 10,11.(4)

(excluding capital) would be limited to paying for the time of faculty members. What would be the stance of the provinces under such circumstances?

The first point to observe is that a substantial part of the provincial subvention tied to graduate education actually goes to cover the indirect costs of research. In Ontario, for example, the provincial income related to graduate enrolments is currently about $90 million. Funded research amounts to about $60 million. The indirect cost of funded research based on a rate of 35% is about $21 million. The first thing the Ontario government would wish to do would be to lower the weights for graduate students by an average of nearly 25%.

As matters now stand, each university receives more or less equitable treatment for its undergraduate programmes but some, mainly older universities, receive large additional sums (tied to graduate enrolments) which allow them to devote a disproportionately larger amount of their total faculty time to research than other mainly younger and smaller institutions. This is because the values attached to graduate students are a proxy for the combination of the costs of graduate instruction and the provincial contribution to research. The research subvention is the larger of the two and in fact represents the major commitment of resources, especially faculty time, which must be made before the university is ready to accept graduate students.

It seems clear that the use of graduate counts is a poor proxy because it means that the only way a university can get research time covered in excess of that provided by the uniform treatment of undergraduate programmes is by accepting graduate students. It is reasonable to assume therefore that provincial governments will wish to discontinue the heavy weights attached to graduate students and substitute weights related to research performance plus modest weights to recognize the incremental costs of graduate instruction.

The basis for formula weighting related to research could be either to recognize those universities where research is actively pursued assuming that it will continue to be unevenly distributed among universities; or to deliberately set out to create certain research universities. Given the fact that a number of universities already have international recognition for their research, the former choice would be the more likely.

What sort of a formula could be devised to reflect research activity? The first requirement would be that it recognize research in all fields as part of

the university's commitment to the support of critical inquiry. Second, the formula should support commitment to research of high quality. Third, the formula should recognize the amount of research in terms of some estimate of faculty time. Fourth, the formula should recognize only extended requirements of faculty time. The time for Bonneau-Corry's reflective inquiry or for modest research commitments of faculty would be covered in the undergraduate formula which assumes, say, nine hours of teaching and the remainder of the week available for teaching preparation and other purposes. Finally, the formula should give stable support over a period of about five years.

The basic cost to be covered in a research formula would be faculty time. The unit representing this cost could be known as a research income unit. It would be calculated on the basis of one RIU entitlement for so many dollars of sponsored research income. Different kinds of research have different costs. On the average, for example, the cost of providing a full-time researcher in chemistry with his needs (equipment, supplies, services and assistants) would be a good deal more than for a full-time researcher in philosophy.* Conversely, the amount of faculty time required for equal size grants would be larger for the philosopher than for the chemist. This principle could be incorporated into a formula. The formula might recognize, say, three categories of research - sciences, social sciences and humanities, and allow one RIU for each $50,000 of income for sponsored research in the sciences, one RIU for each $30,000 in the social sciences, and one RIU for each $10,000 in the humanities (Table 1).

The figures are entirely hypothetical. In practice it would be necessary to derive a set of research categories, corresponding RIU entitlements, and RIU values which, to begin with, would yield for each university approximately the same income it receives under its present formula. Otherwise, the new formula would produce serious perturbations in universities' income. While universities would not experience immediate changes in provincial income, the new formula, over time, would reflect changes in research activity.

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*In the AUCC Cost Studies Arts faculty reported 24% of their time devoted to graduate supervision and research. The figure for Sciences faculty was 36%. However, in the same year (1967-68) Arts research income from federal sources was only $5,157,000 whereas Science research income was $60,731,000.(4)

The assurance of quality should be gained through reform in the adjudication of individual research proposals by granting agencies of the federal government. Such reform has been frequently called for. Peer judgment is important but the peers should be drawn from government and industry as well as the universities. Review committees should not be overloaded, should be provided with good staff work and independent refereeing. The review committee members should serve for limited terms and should not have a voice in the choice of their successors.

As mentioned, the research formula should provide stable support for five years, adjusted annually to offset rising costs. Thus, for each quinquennium the formula would be related to average annual faculty time devoted to funded research over the past five years. This would prevent much of the short run steering effect said to be characteristic of present formulae.

A formula of this kind might go a long way towards meeting some of government's concerns about the inadequacy of the present formula. It might for the universities, relate their income more realistically to their costs and allow institutions to develop research competence without being pressed to offer graduate programmes. It would not solve the problems of planning and coordinating graduate activity. Other mechanisms are required for that purpose.

The proposal, it will be noted, relates RIU income to sponsored research. Contracted research should be included under this rubric provided that it is research for which the university is not reimbursed for faculty salaries. If the contract research requires leave-of-absence or released time of faculty which is reimbursed, then it should be excluded from the calculation of RIU income.

Certain other exclusions should be made where there are special arrangements such as those for Negotiated Development Grants. In these cases, for special reasons, faculty salaries may be paid for a period of time by the sponsoring Council. If the university has the relevant salaries paid directly by the federal agency, it obviously should not receive RIU entitlement related to such research. However, since the university is expected to pay the salaries after a specified number of years, the negotiations leading to the

award of such grants should include provincial officials as well as the university and the federal agency.

Finally, a word should be said about research relevance from the standpoint of the provincial government. As with the federal government, the two concerns are to see that the amounts available are appropriate and that only research and researchers of high quality are supported. These are the policies which will help ensure strong universities and it is in seeking and maintaining these objectives that relevance is to be found. Beyond this requirement, if the provincial governments have research needs to serve their varied purposes, they can negotiate to procure such research from university groups, on the basis that the department of government involved agrees to pay the full cost.

TABLE 1

A Hypothetical Model for a New Formula
Based Partly on Student Counts and
Partly on Sponsored Research Income

PRESENT METHOD			
Undergraduate formula income		$7,000,000	
Graduate formula income			
No. of graduate students	417		
Average weight	4		
BIU value	$1800		
Income		$3,002,400	
Sponsored research income		$2,100,000	
Total income			$12,002,400
NEW METHOD			
Undergraduate formula income		$7,000,000	
Graduate formula income			
No. of graduate students	417		
Actual weight per student	1.5		
BIU value	$1800		
Income		$1,126,000	
Sponsored research incomes			
Sciences	1,600,000		
Social sciences	390,000		
Humanities	110,000		
Total		$2,100,000	
Indirect (35%)		$ 735,000	
Research formula income			
Entitlement			
1 RIU per 50,000 sciences income	32 RIU		
1 RIU per 30,000 soc. sci. income	13 RIU		
1 RIU per 10,000 humanities income	11 RIU		
Total	56 RIU		
Unit value - $20,000			
Research formula income (56 X $20,000)		$1,120,000	
Total income			$12,081,000

FOOTNOTES

(1) Bonneau, L. and Corry, J.A. Quest for the Optimum: Research Policies in the Universities of Canada. Association of Universities and Colleges of Canada, Ottawa, 1972.

(2) Lamontagne, M. et al. A Science Policy for Canada, Vol. 2. Information Canada, Ottawa, 1972.

(3) Davis, D.O. et al. The Learning Society: Report of the Commission on Post-Secondary Education. Ministry of Government Services, Toronto, 1972.

(4) Macdonald, John B. et al. The Role of the Federal Government in Support of Research in Canadian Universities. Information Canada, Ottawa, 1969.

(5) Bladen, V.W. et al. Financing Higher Education in Canada. University of Toronto Press, Toronto, 1965.

(6) Bronowski, J. "A Moral for an Age of Plenty" in Saturday Evening Post, Issue 233, November 12, 1960.

STUDENT FINANCIAL AID

The Committee on Research and Planning has, almost from its inception, taken a strong interest in the topic of financial assistance to students. The survey done by the Committee between October 1964 and June 1965 was the first comprehensive study of student awards in Ontario, and may possibly have had some influence on the Province of Ontario Student Awards Program (see discussion in Accessibility and Student Aid, COU Subcommittee on Student Aid, May, 1971, pages 6-9 and Appendix C). The Committee's examination of the subject in Towards 2000, pages 146-151, outlines a position which we still support.

The Commission on Post-Secondary Education in Ontario states that the principle of universal access to post-secondary education is appropriate to our times, being advantageous for both work and leisure, and that access to educational opportunities for those able to benefit from them is dictated by the public funding of our educational system. On the other hand, the Commission has recommended that a greater proportion of the cost of post-secondary education be absorbed by students and their families. To soften the blow, and to maintain the government's often stated policy of universal accessibility, it is proposed that outright grants be made available to students of families at the lower extreme of the income scale. Using an unspecified sliding scale, most students would have access to loans, repayment of which would be "based on the 'ability to pay' principle and fixed as a percentage of taxable income in any year."

In reference to this scheme the objection expressed in Towards 2000 to the CORSAP proposal is still cogent (page 148):

> The indebtedness could be enormous ... and beyond that, a fundamental ethical principle would be violated. What is unfair about the proposal is that only the lower income groups would have to accept the penalty of debt. The proposal expressly states that the student's family still has the responsibility to pay what they can afford. Not all will have to go into debt.
>
> There is a very real cost to being in debt, and it is difficult to see how the principle of equity is served by requiring some to incur debts and others not. Equity is neither served nor denied by conferring a benefit on an individual that he did not previously enjoy. Equity must be determined by examining a person's position relative to others. When the benefit conferred imposes a penalty

> (fifteen years of indebtedness at prevailing interest rates) which is not required of others who enjoy the same benefit because their parents can afford to help them, this is scarcely equitable. It is fine-sounding phrase to ask at what stage does the individual "accept his share of responsibility for meeting society's goals", but under this proposal, only the poor would be faced with accepting such responsibility.

Even if we were willing to set aside the ethical consideration, this part of the Commission's proposals would greatly concern us. In view of the implications to generations of students to come, the contingency repayment loan programme is put forward by the Commission with a vagueness and a lack of supporting data which is appalling. This, in spite of the fact that the authors of the background study Financing Post-Secondary Education, clearly state in their editorial foreword:

> The reader's attention is also drawn to the fact that the authors of the present study had to build in a number of important assumptions, expecially assumptions about the demand response of students to changes in tuition levels, loan and grant terms, repayment arrangements and other parameters which could only be quantified on the basis of the researchers' judgment or intuition. This was necessitated by the shortcomings of the empirical data currently available on such subjects. The researchers have attempted to make these assumptions explicit, but it is important to be aware of the extent to which relatively modest changes in some of these values would affect the outcome of the analysis and the inferences to be draw therefrom.

Some of the data which were lacking in 1971 are fast becoming available. It would be most unwise for Ontario to embark on a contingency repayment loan programme without making an effort to answer the following questions (which the Commission has painfully failed to do):

1. To what extent should students be subsidized for post-secondary education? Although the Commission has proposed a method for assessing only the direct costs of a student's education, it presents no justification for the proposed split. Since the financial commitment by the individual is relatively large, the matter of distribution of costs is a vital issue. The Commission's report offers no help in evaluating the proposed distribution of costs between society and the student - the orientation of post-secondary costs is almost entirely from the public budgetary (as

opposed to private) side, and foregone earnings are ignored.

2. How much money will it cost a student for each academic year of full-time studies (or the equivalent)?

3. Is the contingency repayment loan programme proposed by the Commission viable? It would be unfortunate, indeed, if, in order to shift more of the cost of post-secondary education to the private sector, a monstrous machinery is created which unnecessarily favours certain individuals and uses an unrealistic amount of public funds for its maintenance.

4. How would Ontario's student financial aid programme integrate with CSLP or other federal student financial aid plans under consideration?

We believe that the Province of Ontario Student Awards Program which has been in existence for seven years should be thoroughly evaluated before any substitute programme is considered. It is a variable scheme, with enormous flexibility. If it is desired to recoup a greater part of the cost of post-secondary education from the individuals who have benefited financially from pursuing post-secondary studies, the proper way is through a graduated income tax; some of the advantages of this method are listed in Towards 2000.

PROFESSIONS

The Committee on Research and Planning agrees in general with the recommendations of the Commission on Post-Secondary Education in Ontario respecting the relationship between educational programmes and licensing examinations for practice in professions and para-professions.

The Committee on Research and Planning does feel, however, that the Commission has not given adequate consideration to the system of examination procedures as they have recently evolved.

In the not-too-distant past, examinations were conducted by the licensing bodies. Not only did they duplicate the university or training school graduating requirements, but they often differed in their emphasis and, at their worst, were administered by practitioners who had not themselves kept abreast of the latest theories, practices, and procedures being taught in the advanced professional schools. All this has changed; and while the professional bodies grant the licenses, they do so on the evidence of the professional schools'

assessment, which is based not simply on an examination but as well on the more thorough and fairer assessment of the individual over time.

Moreover, we believe that the Commission places too much confidence in examinations. Recent studies have shown, for example, that 92% of the questions in medical examinations for the National Board certification in the United States tested only the capacity of the student for simple recall; whereas what really needed to be ascertained was the prospective physician's capacity as a problem-solver.

The Medical Council of Canada is undertaking similar studies, and major reforms can be expected. This Committee is not wholly familiar with the state of the art at the present time, but we are convinced that the Commission's reliance on examinations as the single determinant for entry into a profession or para-profession is over-simplistic, and may, in fact, perform a disservice both to the would-be practitioner and to the public.